

### **REMARKS**

Claims 2-11, 13-22 and 28-43 are pending in the above-captioned patent application after this response. Claims 2-11, 13-22 and 28-42 have been rejected. The Applicant respectfully traverses the rejection of these claims as set forth herein. Further, the Applicant has added new claim 43.

Support for the new claims can be found in the pending application, including the specification, drawings and the claims. More specifically, support for new claim 43 can be found in claims 28 and 31, in the drawings at Figures 1, 3 and 4, and in the specification at page 6, line 6 through page 7, line 17.

No new matter has been added by this response. Consideration of the pending application is respectfully requested.

### **Rejections Under 35 U.S.C. § 102**

Claims 2-11, 13-22 and 28-42 are rejected under 35 U.S.C. § 102(e) as being anticipated by Zahavi et al. (US 6,886,020). As provided above, the Applicant respectfully traverses the rejection of claims 2-11, 13-22 and 28-42 on the grounds that the cited reference does not teach or suggest the features of these claims.

Zahavi et al. is directed toward an automated system to monitor and manage the status, performance and configuration of networked storage components. (Col. 1, lines 8-10; Col. 2, lines 65-67). The system includes a collection manager that manages collection of data and effects file transfer of collected data according to a user specified policy. (Col. 3, lines 10-13). The policy allows the user to specify the interval of collection, i.e. one minute, 15 minutes, hourly, or in "shifts", such as a daily shift (8 a.m. to 4 p.m., for example), weekly shifts and monthly shifts. (Col. 3, lines 13-17). The concept of "shifts" is consistent with time intervals during a typical business work schedule, i.e. day shift, swing shift, graveyard shift. (Col. 3, lines 17-21).

The system includes a plurality of archives that include hourly, daily, weekly and monthly archives. (Col. 6, line 64 through Col. 7, line 4). Each of these archives specifies the hours of each of the business shifts that comprise each such archive. (Col. 6, line 64 through Col. 7, line 4). When data is collected, for example, in minutes,

the collection manager converts the data to a base density unit of hourly data which can be archived as daily shifts, weekly shifts, or monthly shifts. (Col. 7, lines 41-48). Zahavi et al provides an example that utilizes 15 minute intervals of data collection, one following another. (Col. 7, line 62 through Col. 8, line 17). Zahavi et al does not teach or suggest that there is any idle time between these 15 minute intervals. In fact, Zahavi et al indicates that there is no idle time period between these intervals by stating that data from four records for each hour, e.g., four consecutive 15-minute intervals totaling one hour, are averaged to create and store an hourly archive file. (Col. 7, lines 49-52; Col. 7, line 62 through Col. 8, line 17). Further, twenty four consecutive hourly archives (totaling one 24-hour day) are assembled to create a daily archive, etc. (Col. 7, lines 53-54; Col. 8, lines 18-20).

In summary, Zahavi et al does not teach or suggest that there is any idle period when data is not being collected and stored in the archives. Because archives are set up for each time interval, i.e. 15 minutes, hourly, daily, weekly, monthly, etc., data is constantly being saved to these archives. Since there is no idle period, Zahavi et al clearly does not teach that uncompressed data is retrieved from the archives, compressed, and then re-stored in the archives during an idle period. Stated another way, Zahavi et al. does not address that any retrieval and subsequent compression of data, for instance, occurs at a time that is independent of backup of data into the archives.

Further, Zahavi et al does not teach utilizing an idle period during which processes other than data backup occur, or even that such an idle period might serve some important purpose or function. Thus, Zahavi et al does not teach or suggest the importance of the timing of both a backup period (when data is backed up) and an idle period (when retrieval, compression and/or re-storage can occur without slowing or otherwise hindering the backup of data), and that these periods should be mutually exclusive.

From another perspective, Zahavi et al also does not teach or suggest that other processes (i.e. retrieval, compression and/or re-storage of data) should not occur during the backup period. Nor does Zahavi et al specify that certain other data processing

activities are to commence upon the inactivity of various backup processes. For example, Zahavi et al does not teach or suggest that such an idle period commences following a predetermined time of inactivity of the backup device. In other words, there is no suggestion or teaching in Zahavi et al indicating, for example, that after 20 minutes of inactivity of the backup device, the idle period begins during which compression of data on the backup device occurs.

In contrast to Zahavi et al, claim 28 is directed toward a storage system that requires "a primary storage location including an input/output port; a backup storage device; and a controller that transmits data between the primary storage location and the backup storage device according to a duty cycle having a predetermined backup window period when uncompressed data from the primary storage location is copied to the backup storage device, and an idle period when uncompressed data from the primary storage location is not being copied in uncompressed form to the backup storage device; wherein during the idle period the controller retrieves the uncompressed data stored on the backup storage device, compresses the retrieved data, and then re-stores the compressed data on the backup storage device." These features are not taught or suggested by the Zahavi et al. Thus, claim 28 is believed to be allowable. Because claims 29-30 depend from claim 28, they are also believed to be allowable.

Claim 31 requires "a primary storage location including an input/output port; a backup storage device; and a controller that copies uncompressed data from the primary storage location to the backup storage device during a predetermined backup period, and retrieves the uncompressed data from the backup storage device, compresses the retrieved data, and then re-stores the compressed data on the backup storage device during an idle period that begins following a predetermined time period of inactivity through the input/output port." These features are not taught or suggested by Zahavi et al. Thus, claim 31 is believed to be allowable. Because claims 13-22 depend directly or indirectly from claim 31, they are also believed to be allowable.

Claim 32 is directed toward a computer-implemented method that requires the steps of "copying uncompressed data during a predetermined backup window period from the primary storage location to the backup storage device; compressing the data

with a controller during an idle period defined by when uncompressed data is not being copied from the primary storage location to the backup storage device; and re-storing the compressed data onto the backup storage device during the idle period.” These steps are not taught or suggested by Zahavi et al. Thus, claim 32 is believed to be allowable. Because claims 2-11 and 33-35 depend directly or indirectly from claim 32, they are also believed to be allowable.

Claim 36 is directed toward a computer-implemented method that requires the steps of “copying uncompressed data from the primary storage location through the input/output port to the backup storage device; compressing the data copied to the backup storage device with a controller during an idle period that begins following a predetermined time period of inactivity through the input/output port; and re-storing the compressed data onto the backup storage device with the controller during the idle period.” These steps are not taught or suggested by Zahavi et al. Thus, claim 36 is believed to be allowable. Because claims 37-42 depend directly or indirectly from claim 36, they are also believed to be allowable.

### **New Claims**

New claim 43 has been added by this amendment. New claim 43 is of a slightly different scope than the previously pending claims. However, in view of the cited reference, new claim 43 is believed to be allowable. The cited reference, Zahavi et al. has been described above.

In contrast to Zahavi et al, new claim 43 is directed to a storage system that requires “a primary storage location including an input/output port; a backup storage device; and a controller that transmits data between the primary storage location and the backup storage device according to a duty cycle having a backup window period and an idle period, the controller transmitting uncompressed data from the primary storage location for copying to the backup storage device during the backup window period, the controller determining initiation of the idle period based on a predetermined time period of inactivity of data transmission through the input/output port and terminating the idle period once data transmission through the input/output port occurs;

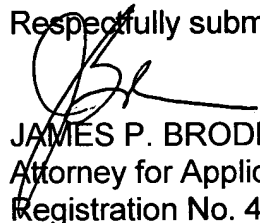
wherein during the idle period, the controller initiates (i) compression of uncompressed data stored on the backup storage device, and (ii) restorage of compressed data onto the backup storage device." These features are not taught or suggested by Zahavi et al. Therefore a rejection of new claim 43 based on Zahavi would not be supported. Therefore, new claim 43 is believed to be allowable.

### **Conclusion**

In conclusion, the Applicant respectfully asserts that the rejection by the Patent Office of claims 2-11, 13-22 and 28-43 should be withdrawn and these claims should be allowed. The Applicant submits that the application is in condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 858-487-4077 for any reason that would advance the instant application to issue.

Dated this 5<sup>th</sup> day of September, 2006.

Respectfully submitted,



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